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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 2655  
Examiner: Unassigned

In re PATENT APPLICATION of

Applicants : Kun-Long LIN et al.

Appl. No. : 10/780,563

Filed : February 19, 2004

For : ARCHITECTURE OF HIGH-SPEED  
DVD ENCODER

Atty. Dkt. : TOP 270

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)  
)  
) **TRANSLATION OF**  
) **PROVISIONAL APPLICATION**  
) **UNDER 37 CFR 1.78(a)(5)(iv)**

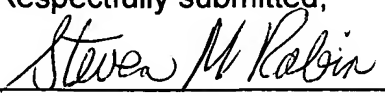
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This is a submission under 37 CFR 1.78(a)(5)(iv) of an English translation of all non-English portions of a provisional application (Ser. No. 60/447,700) whose priority is claimed under the provisions of 35 USC 119(e) and 37 CFR 1.78(a)(4). The provisional application was filed on February 19, 2003 and is cross-referenced in the present application as required by 35 USC 119(e)(i) and 37 CFR 1.78(a)(5)(i). All of the text of the provisional application is in the English language (or immediately followed by corresponding English text), except on the fourth page of text, which contains some untranslated non-English (Chinese-language) passages. Attached hereto are a copy of the page containing the non-English passages, an English translation of those non-English passages, and a Declaration (statement) by the translator that the translation is accurate.

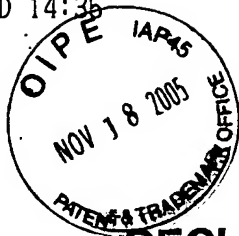
Should any fee be required, please charge the same to our Deposit Account No. 18-0002 and advise us accordingly.

November 18, 2005  
Date

Respectfully submitted,  
  
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SMR:pjl

FEE ENCLOSED: \$  
Please charge any further  
fee to our Deposit Account  
No. 18-0002

**DECLARATION OF TRANSLATOR**

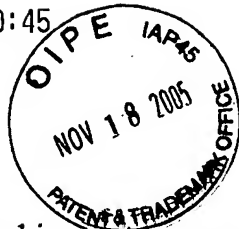
I Tai-Jung LU of TOP TEAM INTERNATIONAL PATENT & TRADEMARK OFFICE located at 3<sup>rd</sup> Fl., No. 279, Sec. 4, Hsin-Yi Rd., Taipei, Taiwan, R.O.C, translator of the provisional application for patent (serial no. 60/447,700) do hereby declare that I am literate in both Chinese and English language, and I certify that the accompanying English-language document is, to the best of my knowledge, a true and accurate translation of the originally-filed Chinese-language provisional application for patent (serial no. 60/447,700).

Signature

Tai-jung LU  
Tai-Jung LU

Date

2005/11/8



5. The CD-ROM drive system requires a medium having a large storage quantity to store temporary data while performing the aforementioned encoding processes such that the original data can be converted into appropriate format before being recorded onto an optical disk.

6. According to the aforementioned system, the operating speed of the system depends on memory bandwidth. By using an 8X system as an example:

- (a) IDE->DRAM (raw data)
- (b) DRAM->EDC/Scramble/PI->DRAM
- (c) DRAM->PO->DRAM
- (d) DRAM->disc

That insufficient memory bandwidth restrains the operating speed from increasing becomes a serious challenge if we try to increase operating speed based on the above system configuration.

7. Thus, we propose a new system configuration that overcomes the aforementioned disadvantage by reducing memory accessing frequencies so as to upgrade the system operating speed into 16X.

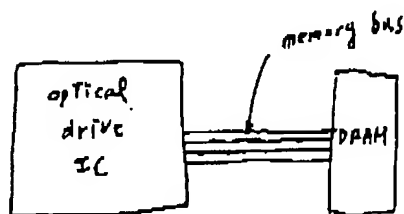
- (a) IDE->ID/IED/CPR\_MAI/EDC->DRAM
- (b) DRAM->PD(Scramble)->DRAM
- (c) DRAM->PI(Scramble)->disc

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5. 以光碟机系统来看, 需要一大量暂存资料媒介来处理上述的运算, 才能将原始资料以正确的格式烧录到光碟片中储存, ex. DRAM



6. 以上述系统来看, 記憶體頻寬決定系統的倍數提升, 以根據 Specification 來 implement 的 8x 系統舉例:

- (a) IDE  $\longrightarrow$  DRAM (raw data)
- (b) DRAM  $\longrightarrow$  EDC/scramble/PI  $\longrightarrow$  DRAM
- (c) DRAM  $\longrightarrow$  PO  $\longrightarrow$  DRAM
- (d) DRAM  $\longrightarrow$  disc

以此系統為例, 如果系統倍數發展將面臨重大挑戰, 記憶體頻寬嚴重不足, 系統倍數提升將受到限制

7. 因此我們提出另一架構, 大幅減少記憶體存取次數來改善頻寬不足的問題, 使得整體光碟机系統倍數大幅提升到 16x

- (a) IDE  $\longrightarrow$  ID/IED/CPR-MAR/EDC  $\longrightarrow$  DRAM
- (b) DRAM  $\longrightarrow$  PO  $\longrightarrow$  DRAM  
(scramble)
- (c) DRAM  $\longrightarrow$  PI  $\longrightarrow$  disc  
(scramble)  
↑  
record

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